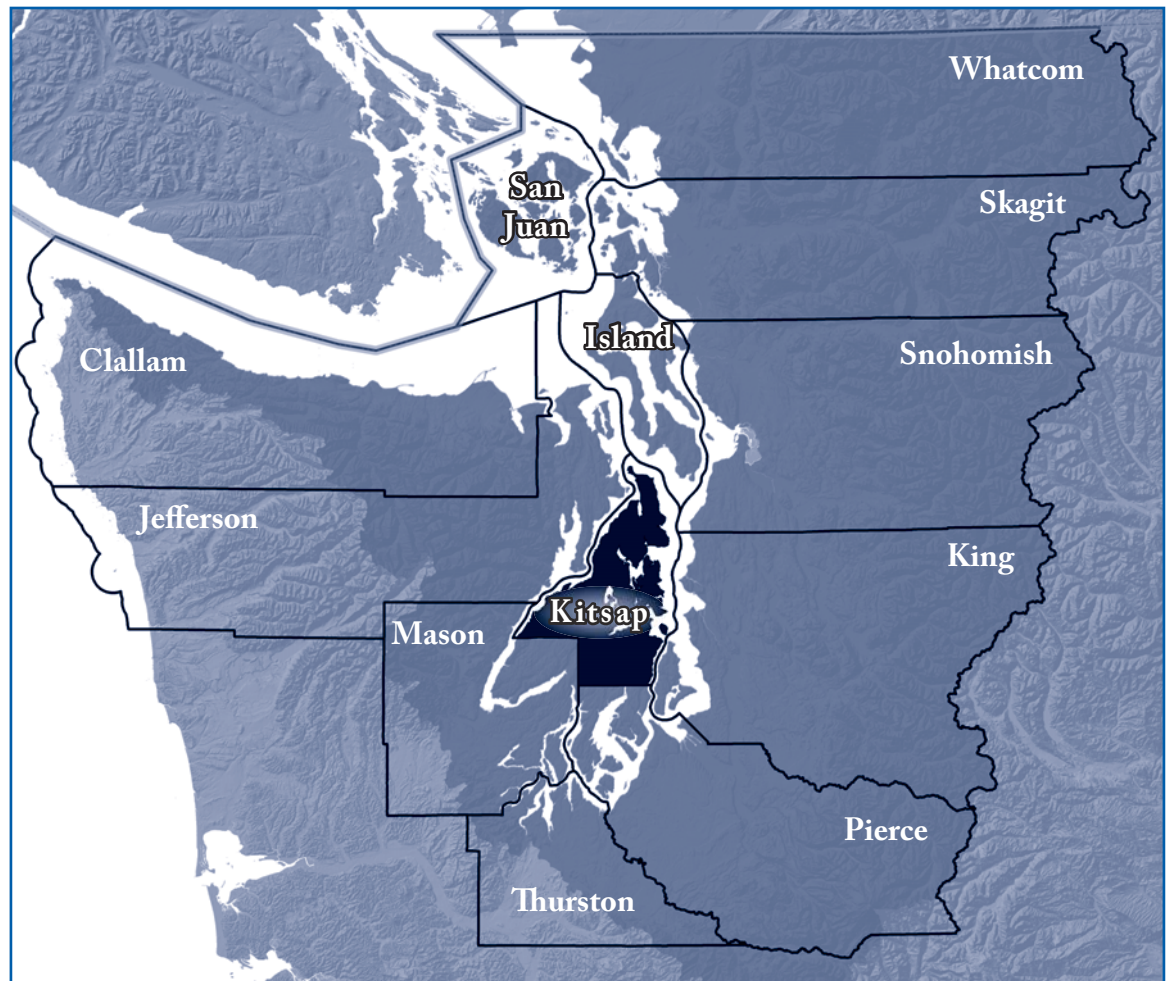


Working together to improve water quality

Kitsap County Surface and Stormwater Management Program

A CASE STUDY



Introduction

Kitsap County's **Surface and Stormwater Management (SSWM) Program** is a comprehensive, interagency partnership to address local issues related to stormwater management, nonpoint source pollution, and water quality. County leaders created the program in 1993 to protect public health and natural resources, meet state and federal requirements, minimize costs, and provide stable, ongoing funding to address nonpoint source pollution.

The state's *Puget Sound Water Quality Management Plan*, first adopted in 1987, directs all

local governments in the Puget Sound region to develop a comprehensive stormwater management program and take action to correct sources of nonpoint pollution that harm Puget Sound. The SSWM program is an excellent model of a cooperative partnership that fulfills both goals in a comprehensive and efficient manner.

This case study describes the origins of the program, how the partnership functions, and the many benefits of the program.

Kitsap County

Kitsap County is one of 12 Washington counties in the Puget Sound basin. With 240,719 people (2003 U.S. Census Bureau estimate) and a land area of 396 square miles, the county is the second most densely populated in the state with 585.8 people per square mile. Yet the county also has rural areas with numerous small farms and forests.

Located between Hood Canal and central Puget Sound, the county drains to both bodies of water, with 228 miles of shoreline and numerous bays and inlets ideal for shellfish growing and boating. Only San Juan County has more miles of shoreline.

In the first half of the twentieth century, dairy farming dominated land use in the county. In the last 50 years, many farms were subdivided into one- and five-acre parcels. Subdivided land results in more animals and people living on the same amount of land and also increases loadings of nonpoint source pollution flowing into streams and bays.

The most densely developed portion of the county is the eastern part, particularly Dyes and Sinclair inlets and Liberty Bay. This area contains the most residences and industrial development and all of the urban areas.

With no large rivers or mountains containing snow pack and a long marine shoreline, Kitsap County is similar in many ways to an island and relies on groundwater for its drinking water. Since the county's streams are generally short in length,

surface pollutants in stormwater runoff move rapidly to marine waters. County officials estimate that nonpoint sources contribute half of the pollution entering creeks, streams, and the Puget Sound in the county.¹ Many streams in the county sustain salmon populations.



Kitsap County has numerous bays, inlets and streams.

¹ SSWM educational brochure, Stormwater Runoff in Kitsap County, <http://www.kitsapgov.com/sswm/7001.pdf>

Forming the Kitsap County Surface and Stormwater Management Program

In the early 1990s, Kitsap County agencies faced several difficult issues:

- The department of public works needed to develop a stormwater management program.
- The conservation district needed to respond to 1989 legislative approval to seek a fee to fund programs for landowner assistance.
- The health district sought more permanent funding to deal with shellfish closures, failing septic systems, and other water quality problems.
- The department of community development sought more permanent funding for state-mandated watershed planning efforts.

The U.S. Environmental Protection Agency (EPA) had just developed the National Pollutant Discharge Elimination System Permit Program for communities with populations of more than 100,000. Phase II of the program, for smaller communities (including Kitsap County) was scheduled for the coming decade.

The *Puget Sound Water Quality Management Plan* and locally developed watershed action plans (under WAC 400-12) were also underway, and raised local awareness about the need to manage stormwater and nonpoint pollution. A group of county managers and commissioners with a long-range vision for water quality began working together to design a coordinated, efficient interdepartmental partnership to meet multiple needs in the county.

“Water quality is important to the people who live in Kitsap County,” said Chris Endresen, a Kitsap County commissioner, who has been a supporter of the SSWM Program since its inception.

“We have so much waterfront and shoreline, and our drinking water comes from the groundwater,” Endresen added. “We love to recreate here—we have small lakes, fishing and swimming holes, and shellfish beds. We set up SSWM to comply with the various tenets of the Clean Water Act, but, more importantly, we set it up to ensure the future of our county.”

In October 1993, after two years of planning and public process, the Kitsap County Board of

Commissioners adopted Ordinance 156-1993 establishing the SSWM Program.² The goals of the program are to:

- Protect public health and natural resources.
- Minimize institutional costs.
- Obtain support for the program from other municipalities, tribal governments, and county residents.
- Meet state and federal regulatory requirements.
- Provide a permanent funding source to address nonpoint source pollution.

One of the key features of this ordinance was the marriage of surface water quality and stormwater issues. Initially, the public works department was simply working with county commissioners to create a stormwater management utility supported with locally generated fees—something many communities and counties were doing in the early 1990s. However, the health district, the conservation district, and the department of community development recognized an opportunity for collaboration and cooperation.

“In some ways we were the interlopers in the situation,” said Scott Daniels, deputy director of Kitsap County Health District. “We saw the public works guys organizing to set up a ‘stormwater-only’ fee and saw an opportunity to enhance and coordinate all water quality programs. Hats off to Randy Casteel [director of public works] and Dave Dickson [then manager of SSWM] for making it an easy process. And hats off to the commissioners for wanting to bring together all the various agencies to create a truly effective water quality enhancement program.”

From its inception, the SSWM Program gained notice for its innovative approach to surface and stormwater management. In 1996, the National Association of City and County Health Officials recognized the program with the Award for Excellence in Environmental Health. The National Association of Counties also recognized the program with an Award for Innovative Programs in 1998.

² www.kitsapgov.com/sswm, Scroll down to “Why was the program established?” and select “Section 12.36”

Financial Structure

Fees from Kitsap County's SSWM Program apply to properties in unincorporated Kitsap County. The program does not bill people living within incorporated cities. Kitsap County Code Section 12.40 defines the SSWM Program rate structure³. County commissioners created the SSWM district in 1993, set the fee structure in 1994, and collected the first funds in 1995.

SSWM Program fees are based on land use and the total amount of impervious surface of each property (Table 1).

County ordinance 315-2004⁴ provides a 50-percent reduction in SSWM fees to commercial property owners that meet one or more of the following:

1. **Direct discharge of all stormwater to tidally influenced waters** (with prior water quality treatment according to current county standards).
2. **100 percent stormwater infiltration** (with water quality treatment to current county standards).
3. **Rainwater harvesting:** Collecting and reusing 100 percent of the runoff from building surfaces for on-site use. Uses include gray water plumbing, vehicle washing, or site irrigation that results in zero surface water runoff.

SSWM fees appear on annual property tax billings. When the county treasurer first collected these fees in 1995, the base rate was \$45. In 2004, managers of the SSWM Program requested a base rate increase of \$60 per year to keep pace with inflation—the first increase since the fees began. Commissioners approved a rate increase to \$47.50 for 2005 and an increase to \$50 for 2006.

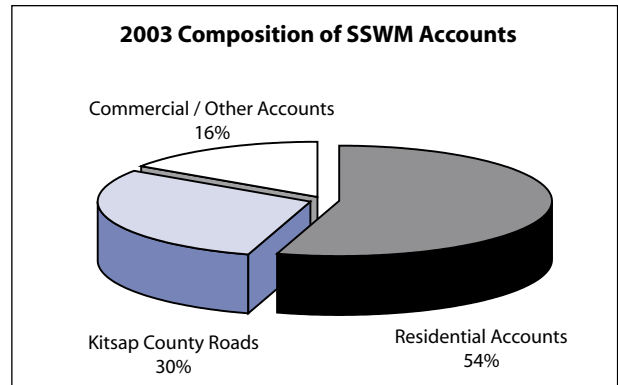


Figure 1. Percent of total SSWM revenue from each type of account.

Figure 1 illustrates that residential accounts provide 54 percent of SSWM revenue, commercial accounts provide 16 percent, and roads 30 percent.

In the first nine years of available data from the program, total revenue collected increased from \$4,395,640 in 1995 to \$4,499,268 in 2003 (Figure 2). The 2.4-percent increase in revenues is far less than the 33-percent increase from inflation from the end of 1994 to November 2004.⁵

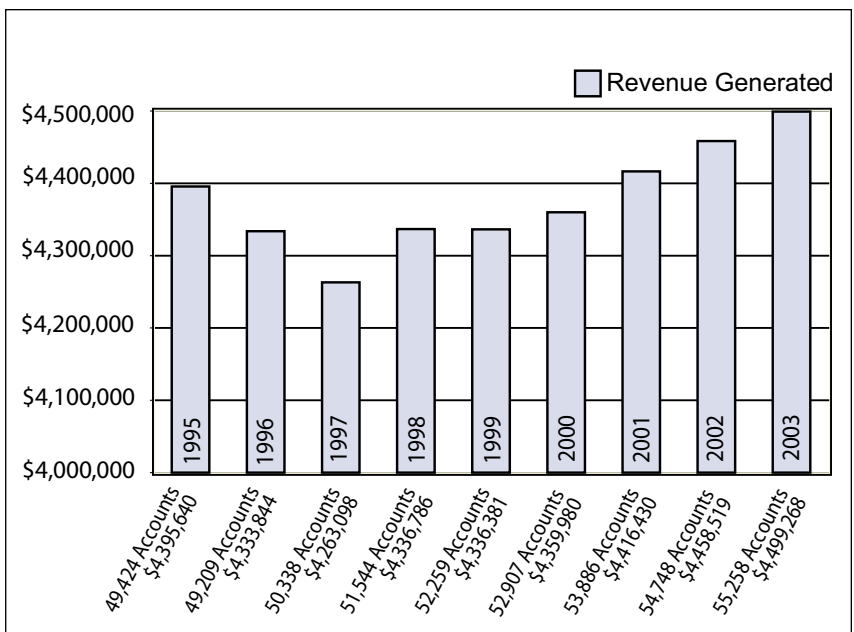


Figure 2. Annual revenue generated by the SSWM Program and number of accounts.

³ www.kitsapgov.com/sswm, scroll down to "Why was the program established?" and select "Section 12.40"

⁴ www.kitsapgov.com/sswm/fee_credit.htm

“What that graph does not show is that the areas subject to the fees have changed over the years,” said Dave Dickson, assistant director for Kitsap County’s Public Works Utilities Division.

“For example, some areas become incorporated or are annexed into one of the cities and are then no longer required to pay the county SSWM fees,” Dickson added.

Table 1. SSWM fee structure.

Land Use Type	SSWM Fee
Single Family Residence based on one Equivalent Service Unit (ESU) of 4200 square feet of impervious surface.	\$47.50 per year for each ESU (unit rate). (For comparative purposes, this is approximately \$3.96 per month.)
Multifamily residences (duplexes, triplexes and fourplexes).	\$47.50 per year (one unit rate) per dwelling unit (or approximately \$3.96 per month).
Apartments, commercial, industrial and institutional uses.	Estimated or measured square feet of impervious surface divided by 4200 sq ft (one ESU) times the unit rate.
Undeveloped property and forestlands.	No fee .

Table 2. Revenue collected from SSWM fees is apportioned as shown below.

Program Receiving Funds	Percent of Total	Activities Funded
Public Works Department Operations and Maintenance	33%	Routine maintenance of more than 400 ponds, nearly 10,000 catch basins, and numerous other stormwater facilities.
Public Works Department Construction Fund Transfer	14%	Design and construction of new stormwater facilities for water quality, fish passage, and flood control.
Public Works Department Program Management	16%	Program costs such as rent, office utilities, photocopies, office administration, billing system maintenance, and program manager salary.
Kitsap County Health District Source Control	14%	Water Quality, Pollution Identification and Correction, and Wellhead Protection programs.
Conservation District Agriculture Program	5%	Staff and program costs for landowner assistance public education and involvement.
Department of Community Development	5%	Watershed Planning, Stream Team, and Public Education programs.
Public Works Department Monitoring	4%	Stormwater outfall monitoring, soil testing from street cleaning, and responses to complaints about water quality.
Public Works Engineering	4%	Salaries associated with designing capital construction projects.
Public Works Debt Service	3%	Lease and building bond for the Public Works facility.
Public Works Department Public Outreach	1%	Education programs.
Public Works Department Planning	1%	Geographic Information Systems mapping and drainage planning.

⁵ Calculation provided by Dave Tucker, stormwater manager for SSWM, available at: <http://stats.bls.gov/cpi/home.htm#tables>.

SSWM Partners and Programs

The Kitsap County Public Works Department provides overall management for the SSWM Program. Four agencies carry out program activities. Two of these, the departments of **Public Works** and **Community Development**, are under the direct authority of the county's board of commissioners. The **Kitsap County Health District** is governed by a health board composed of elected officials from the county and the four cities. The **Kitsap Conservation District**, established by RCW 89.08, is governed by a 5-member local board of supervisors, and operated

under the authority of and partial funding from the state through the Washington Conservation Commission.

"Part of the genius of this program is that we didn't create a new super-agency to deal with our local water quality," Dickson said. "We created a structure within the existing system that encourages all the agencies to communicate with each other. Before, we didn't know much about what each other did. Now we understand and cooperate with each other in some pretty amazing ways."

► Kitsap County Department of Public Works

In addition to overseeing the SSWM Program, the public works department focuses on correcting current and preventing future drainage problems in the urban and urbanizing areas of Kitsap County. Public works department priorities include addressing ongoing drainage problems in the communities of Hansville, Kingston, Suquamish, Indianola, Silverdale, Converse Avenue, Navy Yard City, Manchester, and East Port Orchard.

Public works transfers projects with identified high-priority drainage or water quality problems requiring structural solutions to the capital construction or retrofit program for design, permitting, and construction. The retrofit program handles projects that cost less than \$50,000, are completed in less than three weeks, and are not large enough to warrant the use of hired contractors. SSWM staff design retrofit projects, and either SSWM staff or road maintenance personnel construct facilities.

The Suquamish-Augusta Conveyance Improvement Project is an example of a recently completed capital construction project. Completed in conjunction with the Suquamish Tribe, the county added a water quality treatment unit to a problematic drainage outfall.

Maintaining and inspecting existing stormwater drainage systems is a crucial part of the SSWM public works program. In 2003, staff inspected 720 privately maintained commercial and industrial stormwater facilities and inspected and maintained 435 county stormwater facilities in residential areas.



Photo courtesy of Kitsap County Public Works

A worker installs a water quality treatment unit for a stormwater outfall.

The county's maintenance waste processing facility separates liquid from solid waste. The facility treats liquid wastes and disposes the remaining solids in accordance with local health district and Washington Department of Ecology (Ecology) guidelines.

Additionally, public works uses SSWM funds to maintain a public education and outreach program that works with local school education programs and participates in the annual Kitsap Water Festival. Public works staff also has two full-time employees who monitor stormwater runoff, test soils from catch basins, and respond to public concerns about water quality.

► Kitsap County Health District

The Kitsap County Health District (health district) uses funds from SSWM to protect public health in the following ways:

- Identifying surface waters impaired by bacterial pollution.
- Setting priorities to clean up water bodies.
- Carrying out Pollution Identification and Correction (PIC) Program projects to correct sources of pollution and clean up water bodies.
- Monitoring for paralytic shellfish poison (PSP) in marine waters and for blue-green algae in swimming beaches in lakes.
- Responding to sewage spills.
- Ensuring that sewage generated at marinas is collected and disposed of properly.
- Maintaining a program for onsite sewage system operation and maintenance.

The health district has rules and regulations for onsite sewage systems (Bremerton-Kitsap County Board of Health Ordinance 1996-8) and Solid Waste (Ordinance 2004-2). These rules and regulations authorize the health district to enforce the proper design, construction, operation, and maintenance of onsite sewage systems, and the handling, storage, collection, transportation, treatment, use, processing, and final disposal of all solid wastes, including, but not limited to, animal wastes.

“Prior to the availability of SSWM funds, we were operating in two- to three-year grant cycles in specific areas,” said Stuart Whitford, manager of the water quality program. “We would do a good job in those areas and then have to move on to a completely new area, regardless of where water quality stood in the previous area, because our grant had run out.”

In July 1995, SSWM funds became available and health district staff developed the program to monitor pollution trends. Monitoring began in February 1996. The monitoring is key to the health district’s



Photo courtesy of Kitsap County Health District

A staff member from the Kitsap County Health District conducts trend monitoring at a stream.

ability to protect water quality in the county. The primary focus of the program is to assess long-term pollution trends associated with human sewage and animal waste from nonpoint sources. Health district staff sample water quality monthly at approximately 95 stations on 52 streams and bimonthly at 52 marine stations. Field equipment measures turbidity, dissolved oxygen, pH, and temperature. The health district laboratory analyzes the samples for fecal coliform bacteria.

Data provide an early warning system for evaluating the effectiveness of pollution identification and correction programs, the effects of different land uses on water quality, and the effects of other human activities (such as boating) on the environment. The health district evaluates monitoring data and produces an annual status report for the community. The local newspaper features articles on the status and progress of efforts to clean up water quality, continuing challenges, and program successes.

“Before, we didn’t know much about what each agency did. Now we understand and cooperate with each other in some pretty amazing ways.”

~ Dave Dickson, Kitsap County Public Works

■ Pollution Identification and Correction Program

SSWM partner agencies developed the Pollution Identification and Correction (PIC) Program in the mid-1990s to address fecal coliform pollution problem areas. The health district leads the PIC Program.

Washington State law (RCW 90.72)⁶ requires counties to form shellfish protection districts to address the causes of shellfish closures in commercial growing areas. The PIC Program uses monitoring data to identify priority water bodies for cleanup.

Since its inception, the PIC Program has combined science, strong public outreach, established protocols, a clear plan of action with a long-range vision for the future of the county.

PIC projects address the causes and sources of bacterial water pollution in specific geographical areas that the trend monitoring program has identified. Staff members select projects according to carefully developed protocols. SSWM provides funding for PIC projects that Ecology often supplements with grants. The goals of a PIC project are to:

- Protect public health.
- Protect shellfish resources.
- Preserve, protect, and restore surface water quality.

Figure 3 shows PIC Project areas for 2003-2004. The health district maintains a PIC Program *Manual of Protocol*, which is approved by the state departments of Health and Ecology and updated every two years. The manual details all aspects of the program, including public notification, field safety, property inspection, sample monitoring, enforcement, and reporting. Each year, the health district publishes a detailed work list of priority areas that includes maps, rankings of proposed project areas, and recommendations for specific actions. The work list is based on a mathematical formula to score and rank fecal coliform (FC) problem areas based on:

- Water quality/FC problems based on whether the area meets state water quality standards (50 percent).

- Potential for public exposure (e.g., swimming) or shellfish harvesting (25 percent).
- History of onsite sewage system failures based on the number of sewage repair permits in the area (10 percent).
- Fecal coliform bacteria pathways based on how easily bacteria could reach public areas or surface waters, using measures such as high residential density and multiple tributary streams or discharge points (10 percent).
- Watershed ranking (5 percent). (If an area has a completed watershed action plan, then it receives a point under this ranking system.)

In 2003, Governor Gary Locke recognized the PIC Program with a Local Hero Award for its efforts to preserve, protect, and sustain Puget Sound. The 2003 Hood Canal Environmental Achievement Award honored the program for outstanding efforts to protect and enhance the ecosystem of Hood Canal.

“The reason the PIC Program is successful is that we work with, not against, the public,” said Leslie Banigan, program coordinator for PIC. “We educate folks to help them prevent pollution problems. Nearly all of the people who find they have a problem want to fix it. And whether their problem is a failing septic system or agricultural animal waste, we can provide or find free technical assistance and try to help them find funds to correct their problem.”

PIC Successes

Helping farmers make good choices

One recent success story illustrates the importance of working closely with residents affected by PIC projects. Banigan visited a horse-breeding farm several times to sample a local stream above and below the farm for fecal coliform bacteria. She used results of the water sampling to show the farmer that his property was affecting the water quality of the stream. She offered the farmer a choice: work voluntarily with the Kitsap Conservation District or face an enforcement action.

⁶ <http://www.leg.wa.gov/RCW/> (Select “Title 90 - Water Rights-Environment,” then select “90.72 Shellfish protection districts”)

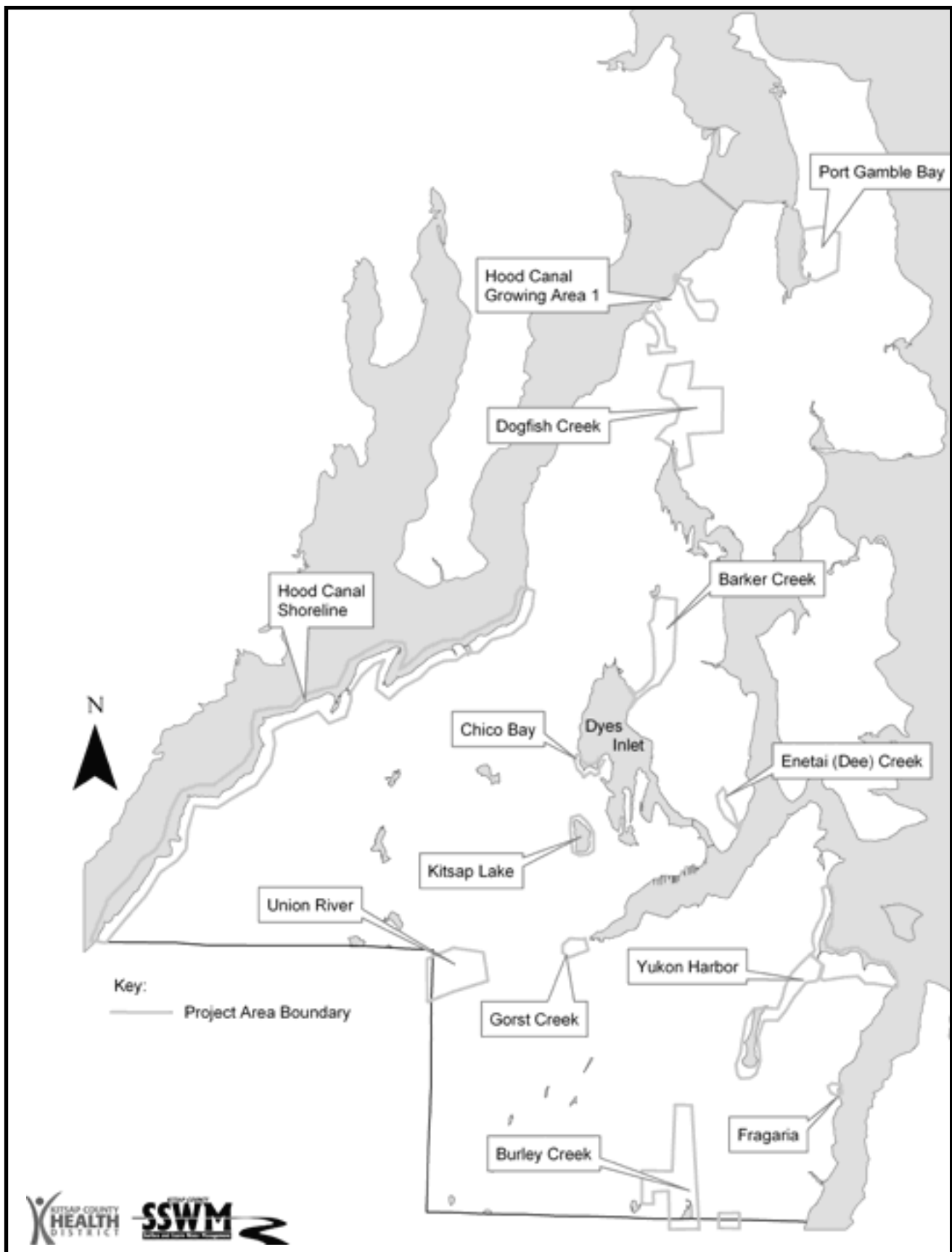


Figure 3. Kitsap County Health District Pollution Identification and Correction Program project areas for 2003-2004.



Photos courtesy of
Kitsap Conservation District

Before and after installing best management practices on a small farm in Kitsap County.

Not surprisingly, the farmer chose to work with the Kitsap Conservation District. The conservation district helped him get an environmental incentive grant and install a number of improvements.

During construction of the improvements, the farmer chuckled with Banigan at the change in his own attitude.

"I used to hide from you in the stalls when I saw you coming," the farmer told Banigan. "If I had any idea how good this would turn out, I never would have done that."

Cleaning up shellfish growing areas in Burley Lagoon

In 1999, polluted runoff from failing septic systems and animal wastes from local farms caused the Washington Department of Health to close all shellfish growing in Burley Lagoon. In response, Kitsap and Pierce counties jointly created the Burley Lagoon Watershed Protection District.

The Kitsap portion of the work on the district represents many of the classic features of the PIC Program. Using PIC protocols, staff worked closely with farmers in Kitsap County and homeowners with septic systems to decrease bacterial pollution in the watershed. Ecology awarded the PIC Program

a Special On-Site Shellfish grant to identify failing onsite sewage systems and provide funding for their repair. PIC staff referred animal waste violations to the Kitsap Conservation District, who found funding to construct improved animal-keeping practices.

The Burley Watershed Restoration Project wrapped up in 2002, and the Department of Health reopened 110 acres of shellfish beds for commercial harvesting. Jerry Yamashita, owner of the Western Oyster Company's commercial shellfish beds in the lagoon, employs 16 people year-round to produce oysters and clams worth \$750,000 annually.



Photo courtesy of Department of Ecology

Aerial view of Burley Lagoon.

Septic surveys at Yukon Harbor

The Yukon Harbor PIC project began in late 2002 and will end in May 2005. As of February 2005, with the project 72 percent complete, staff have completed surveying 231 of 334 properties, identified 33 failing onsite sewage systems, and repaired 24 of the systems. Staff will continue monthly sampling at 25 water quality monitoring stations through September 2005, and trend monitoring continues in the watershed at seven stream stations and five marine stations.

Monitoring and clean up puts Dogfish Creek on the right track

Dogfish Creek in the Liberty Bay watershed near Poulsbo has shown remarkable improvement. Using the unique features of the PIC Program, the health district targeted the area for monitoring and clean-up and identified septic systems that were failing and problems with animal waste disposal.

The Kitsap Conservation District administered federal grants to farmers to clean up animal waste problems. The health district provided technical assistance and information on potential funding sources to owners of failing septic systems. In six years, the relatively small creek went from an average of 340 to 50 fecal coliform bacteria per 100 ml, a significant improvement as the data show in Figure 4.

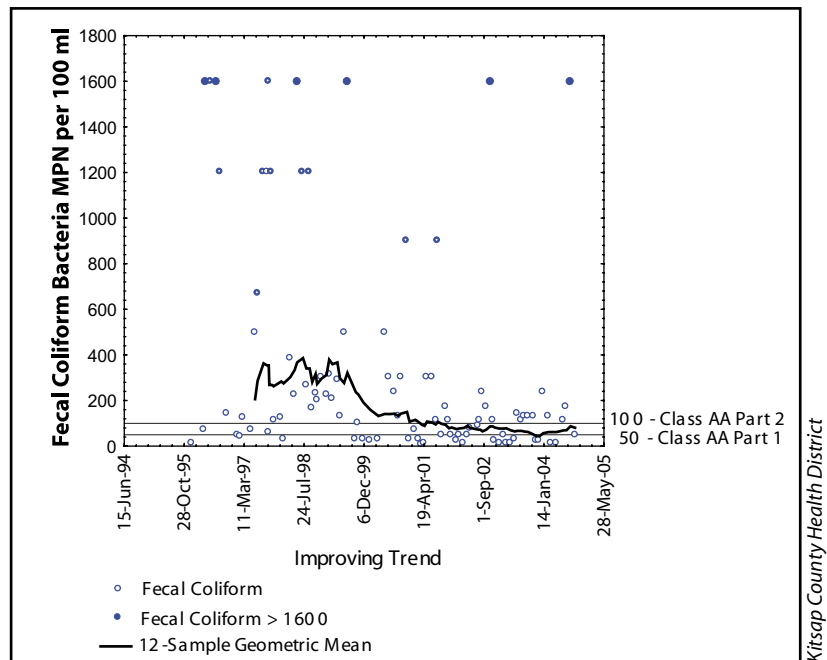


Figure 4. Trend analysis of fecal coliform bacteria levels in Dogfish Creek, showing a decline in bacteria.

Marina Water Quality Program

Kitsap County's shoreline has many inlets, making it a natural choice for boaters and marinas. The health district conducted a study in 1992 and found elevated levels of bacterial pollution within marinas when compared to marine waters outside marinas. As a result, the Kitsap County Health Board worked with the health district and marina owners to draft, review, and adopt a local ordinance that requires marinas to provide sewage disposal infrastructure appropriate to the number and type of vessels moored in the marina. The local marina sewage regulations require that:

- Marinas provide boat sewage control facilities and services.
- Boaters comply with existing federal marine sanitation device regulations.

Health district staff inspect marinas on a regular basis to evaluate compliance and offer technical assistance to help bring marinas into compliance. While the program is largely based on education and outreach, the health district has the regulatory authority to take enforcement actions to protect public health and water quality.

Other Health District SSWM Programs

Onsite sewage system assistance—The health district is developing a financial assistance program for onsite sewage system repairs. Staff will work with a local bank to establish a low-interest loan program to assist property owners whose systems need repair or replacing. In 2002, the health district developed the innovative Self-Help Repair Program. Every year, the health district selects two low-income property owners to receive replacements for failing systems. The project relies on donated materials and labor from area contractors and health inspectors.

Sewage spill response—The health district also responds to sewage spills and posts no-contact advisory signs and notices. For example, on November 19, 2003, the health department responded to a 1.4 million-gallon overflow of the city of Bremerton's combined sewer and stormwater system. When the discharge flowed into the Port Washington Narrows, Sinclair Inlet, and Dyes Inlet, the health district posted a seven-day "no contact" advisory.

Onsite sewage system monitoring—County regulations require operation and maintenance (O&M) contracts on all alternative onsite sewage systems in the county. Alternative onsite sewage systems are those other than standard gravity systems or those that pump to gravity systems, including pressure distribution and aerobic treatment systems. Regulations also require that owners inspect and pump (if necessary) traditional gravity-flow systems every three years. Currently, 3,060 properties within Kitsap County have O&M contracts for their alternative systems.

Paralytic shellfish poison monitoring—While the Washington Department of Health regulates

commercial shellfish harvest areas, the Kitsap health district ensures the safety of recreational shellfish harvesters by regular sampling for paralytic shellfish poison at 20 sites. During 2004, staff maintained shellfish harvest-warning signs at 88 public beaches for periods ranging from two weeks to six months.

Monitoring swimming beaches—The health district also monitors swimming beaches at 28 county lakes for bacterial contamination and toxic blue-green algae blooms between May and September. If levels of *E.coli* bacteria are too high, or if a potentially toxic blue-green algae bloom occurs, the health district issues beach closures and health advisories to the public.

► Kitsap Conservation District

The Kitsap Conservation District provides a voluntary program to help farmers and livestock owners manage their land and animals to reduce and prevent pollution. The conservation district has been a partner agency from the beginning of the SSWM Program.

“We were going to ask our county commissioners to set a \$3 annual assessment to fund our programs,” said Carla Pizzano, coordinator for the Kitsap Conservation District. “We had begun our two-year public notification and public relations program. Then, interest in the stormwater district arose and the county asked us to join the program. The rest is history.”

As with all four SSWM partners, only part of the conservation district’s budget comes from the SSWM program—approximately 50 percent. Most of the conservation district’s other funds are from soft funding sources such as grants, but here, too, SSWM provides an advantage. Because it has the ongoing stability from SSWM, the conservation district can leverage SSWM dollars to match grant funds that allow the conservation district to develop permanent programs and maintain staffing resources over the long term.

“A huge plus is the collaboration and cooperation from the other SSWM departments,” Pizzano said. “Many of us have been with the program since its inception, so we know and trust each other across department boundaries.”

Activities on small farms in Kitsap County are generally for recreation or personal consumption. In almost all cases, livestock keeping is a part-time

venture that requires time, money, and commitment from the owners. The conservation district provides technical assistance and arranges for incentive funds to encourage landowners to upgrade farm management practices. Farmers often come to the conservation district because the PIC Program has found them to be violating solid waste or water quality standards.

Interlocal agreements between the PIC Program and the conservation district spell out how they will handle complaints and violations. The conservation district earns farmers trust by:

- Being a non-regulatory agency.
- Offering free, cooperative, technical assistance.
- Demonstrating to landowners how to manage and protect resources while still meeting their land use goals.
- Guiding applicants through the paperwork required for grants or loans to fund construction of management practices.
- Helping with ongoing operation and maintenance of farm practices.
- Providing education in all their interactions with landowners.

The conservation district supports the rural character of the county as part of the quality of life in Kitsap County and promotes the belief that agriculture and livestock rearing are compatible with surface and stormwater management. Small farms are also economically beneficial to the county in supporting feed, hay and grain stores; veterinarians; tack shops; and related businesses.

The benefits of good farm management also help landowners economically. Animals standing in water and muck become stressed and burn extra calories to stay warm, resulting in feed bills that are higher than necessary.

“It can cost 50 percent more in veterinarian and feed bills if animals are spending most of their time standing in mud or water,” Pizzano said. “For the most part people want to improve their farm management, but they don’t want to be told how to do it. They want to choose, and we want to offer good suggestions.”

The conservation district can help landowners with numerous techniques including: renovating and planting pasture, protecting heavily used areas, providing structures for storing waste (photos, right), and installing culverts. All installations meet the best management practice (BMP) guidelines of the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), ensuring that all projects are accountable for the tax dollars that support them. In 2003, 50 SSWM-supported BMP installations took place that included:

- 14 waste storage structures and roofs.
- 88 feet of waste transfer lines.
- 9,373 feet of fencing.
- 3,992 feet of pipelines, underground outlets and water diversions.
- 1 acre (6 paddocks) of livestock heavy-use area protection.
- 475 feet of animal trails, walkways, and recreational trails.
- 6 watering troughs.
- 9 acres of pasture plantings and cover crops.
- 1 filter strip system.
- 15.75 acres of critical area planting, tree and shrub establishment, and forest site preparation.

Ongoing maintenance and site visits are part of the BMP plan. All physical BMP practices built to the standard and specifications of the NRCS have a minimum life span of 10 years.

One of the more visible conservation district projects is the livestock-waste composting facility at the county fairgrounds. The five-day county fair in August generates almost 600 cubic yards of waste with manure and shavings. Using EPA grant funds, the conservation district built a concrete pad with a



Photos courtesy of Kitsap Conservation District

Top photo: Uncovered manure pile.

Middle photo: Constructing the concrete pad for the shed.

Lower photo: Completed storage shed for waste.

leachate pond to hold the waste. SSWM and public works pump the leachate, and the solid waste stands and ages until the following March.

At the conservation district’s annual “Doo For You” event, residents can pick up a load of the aged manure for free. All manure is distributed in about four hours.

“This is an excellent example of local government managing livestock waste and returning a valuable commodity back to the community,” Pizzano said.

► Kitsap County Department of Community Development

The fourth SSWM partner, the Kitsap County Department of Community Development (DCD) includes the following county permitting divisions:

- Building Permits and Code Enforcement
- Development Engineering
- Land Use and Environmental Review
- Fire Marshal
- Long Range Planning
- Natural Resources Program

The Natural Resources Program's major responsibilities include water resource management, integrating watershed and land use planning, recovering salmon, and contributing to the county's implementation of the Growth Management Act. Through grants and county general funds, Natural Resources staff work with staff from Long Range Planning to help create sub-area plans to carry out the county's comprehensive plan.

This is accomplished through an innovative public planning process—called *alternative futures*—that integrates watershed analysis with land use planning. Natural Resources staff also provide review and input to updates to the county's critical areas ordinance. SSWM currently funds one full-time water resources planner, a full-time Stream Team coordinator and a half-time education and outreach person within the DCD.

"We are the long-range resource management folks who are integrating natural resources with land use," said Jim Bolger, manager of DCD's Natural Resources Division. "We want development to occur in an economic and efficient manner—to avoid situations where natural processes are affected by development and development costs increase from mitigation requirements."

The state's 1998 Watershed Planning Act⁷ funded and initiated a complex process for counties, cities, tribes, and other major stakeholders to plan for and manage their water resources. The Water Resource Inventory Area 15 (WRIA 15) plan covers the entire Kitsap Peninsula. Four counties, four tribes, seven cities, water purveyors, and other major interest groups are working together to come up with a plan to which all can agree.

⁷ Chapter 90.82 RCW (www.ecy.wa.gov/watershed)



Photo courtesy of Kitsap County Public Works

Participants in a tour of a salmon creek learn about the life of stream-dwelling bugs from Stream Team staff.

The highly visible and popular Stream Team Program works with the other education and outreach staff in the SSWM Program to carry out activities such as watershed tours, the annual Kitsap Water Festival, salmon tours, and school education programs. The unique role of the Stream Team is its focus on involving citizens in habitat and watershed restoration.

The Stream Team maintains a core of trained, dedicated volunteers who participate in spawning surveys, school education programs, and biological monitoring of benthic macroinvertebrates. Stream Team trains and coordinates volunteers for two spawning surveys each year in conjunction with the Washington Department of Fish and Wildlife on five streams draining to Hood Canal and with the Suquamish Tribe on three stream systems in eastern Kitsap County.

The Stream Team Program annually trains volunteers to collect aquatic insects used as indicators of stream health, monitor water quality, and plant trees to restore habitat.

Another popular program of the Stream Team is the SSWM mini-grant program. Residents can seek funding up to \$2,500 for small-scale, voluntary actions that landowners, community groups, and businesses can take to support watershed improvement and salmon recovery projects. The programs are educational, with a hands-on, on-the-ground component.

The mini-grant program has funded the Central Kitsap Kiwanis for their Salmon in the Classroom Program for several years. In addition to rearing salmon in a classroom aquarium, 800 students release juvenile salmon into local streams. At the release site, students sample aquatic insects, monitor water quality, and plant trees.

The total annual budget for the mini-grant program is about \$15,000. For the 2005 funding cycle, residents have submitted 15 different applications.

"All the SSWM agencies are proactive with their funding," Bolger said. "I believe we are saving the county money by identifying problems ahead of time before they become much more expensive to fix."

Cooperative Public Education and Involvement

Public outreach and involvement is a cornerstone of the SSWM Program. A stormwater consortium of Kitsap educators from public works, the health district, the conservation district, DCD, the city of Bremerton, the U.S. Navy, Public Utility District #1, and other partners work together to improve efficiency and target key audiences across the county in a coordinated education effort.

For one project, the group produced an informational brochure and poster targeting dog owners about the importance of managing pet waste to protect water quality. The brochure, which was distributed along with donated dog scoops, reads in part: "Each of the 15,000 dogs in our county drops 3/4 pound of waste each day. That is over 5 tons! Pick up and dispose of dog waste by double bagging it and tossing it out with your garbage."

Summary

Surveys of Kitsap County residents show that clean water is one of their top three concerns. Forming a surface and stormwater utility allowed the county to address water quality issues under one umbrella program while still maintaining the efficiency of using existing agencies. The increase in inter-departmental cooperation and collaboration on all water-related issues is a more cost-effective use of public funds. Directors from all four departments in the SSWM program speak positively about the increased level of cooperation and collaboration.

The SSWM Program recognizes that accountability to the public is critical to its success. The program issues an annual report⁸ to the public that includes SSWM revenues, expenses, and accomplishments, as well as its plans for the future. This transparency and accountability for funds helps maintain the public's awareness of the benefits of the program and the results the SSWM have achieved.

"People pay lip service to the idea of communication, but in this county we are really committed to partnerships," Commissioner Endresen said.

The SSWM Program has given Kitsap County a template for cooperation.

"The fact that we have people in place who have been working together for a long time enables Kitsap County some advantages in areas such as grant writing," Endresen said. "Part of the SSWM mandate was that matching funds would be found from sources outside the county."

Most SSWM staff agree that the county would lag years behind current needs for important water quality and availability issues if they hadn't formed the program back in 1993. They also share a determination to keep costs efficient and programs effective.

"Local governments are under tremendous stress with all the mandates and continually shrinking funds," Endresen said. "So many things that are really important are in jeopardy or in crisis in this state. But water quality is our future. The SSWM Program is really about water quality, which is why we are thinking of changing its name to the Clean Water Program."

⁸ www.kitsapgov.com/sswm/default.htm. (Select "2003 Annual Report")

Puget Sound Action Team Partnership

The Puget Sound Action Team is Washington state's partnership for Puget Sound. The Action Team partnership defines, coordinates and puts into action the state's environmental and sustainability agenda for the Sound. Representatives from the following groups serve on the Puget Sound Action Team:

Washington State government, directors of the following agencies:

Community, Trade and Economic Development
Conservation Commission
Department of Agriculture
Department of Ecology
Department of Fish and Wildlife
Department of Health
Department of Natural Resources
Department of Transportation
Interagency Committee for Outdoor Recreation
Parks and Recreation Commission

Tribal Government:

Tulalip Tribes, representing
Puget Sound Tribes

Local Government:

City of Burien, representing
Puget Sound cities
Whatcom County, representing
Puget Sound counties

Federal Government (non-voting):

NOAA Fisheries
U.S. Environmental Protection Agency
U.S. Fish & Wildlife Service

Chair: Director of the Puget Sound
Action Team staff



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Kitsap County Surface and Stormwater Management Program

For more information:

Kitsap County Surface and Stormwater Management Program

<http://www.kitsapgov.com/sswm/>

Kitsap County Public Works

<http://www.kitsapgov.com/pw>

Kitsap County Health District

<http://www.kitsapcountyhealth.com>

Pollution Identification and Correction Program

http://www.kitsapcountyhealth.com/environmenta_health/water_quality/wq_index.htm

Kitsap Conservation District

<http://www.kitsapcd.org>

Kitsap County Department of Community Development

<http://www.kitsapgov.com/dcd/>

Puget Sound Action Team's Stormwater Program

<http://www.psat.wa.gov/Programs/Stormwater.htm>

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